

Textbook Alignment to the Utah Core – 9th Grade Earth Systems

*This alignment has been completed using an “Independent Alignment Vendor” from the USOE approved list
(www.schools.utah.gov/curr/imc/indvendor.html.) Yes X No _____*

Name of Company and Individual Conducting Alignment: Nanette Kalis

A “Credential Sheet” has been completed on the above company/evaluator and is (Please check one of the following):

X On record with the USOE.

☐ **The “Credential Sheet” is attached to this alignment.**

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): 9th Grade Earth System Core Curriculum

Title: Earth Science © 2008 Ecology E © 2008 **ISBN#:** 0-07-877802-6 0-07-877820-4

Publisher: Glencoe/McGraw-Hill

Overall percentage of coverage in the <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> of the Utah State Core Curriculum: _____%			
Overall percentage of coverage in <i>ancillary materials</i> of the Utah Core Curriculum: _____%			
STANDARD I: Students will understand the scientific evidence that supports theories that explain how the universe and solar system developed.			
Percentage of coverage in the <i>student and teacher edition</i> for Standard I: _____%		Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard I: _____%	
OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)
Objective 1.1: Describe the big bang theory and evidence supporting it.			<i>Not covered in TE, SE or ancillaries ✓</i>
a.	Determine the motion of a star relative to Earth based on a red or blue shift in the wavelength of light from the star.	Student Edition: 742-745 Teacher Wraparound Edition: IL 743; RE 745	
b.	Explain how evidence of red and blue shifts is used to determine whether the universe is expanding or contracting.	Student Edition: 742-745 Teacher Wraparound Edition: QD 743	
c.	Describe the big bang theory and the red shift evidence that supports this theory.	Student Edition: 742-745, 753 #26 Teacher Wraparound Edition: ACT 744; QD 743; SJ 744; UAA 745; V 744	
d.	Investigate and report how science has changed the accepted ideas regarding the nature of the universe throughout history.	Student Edition: 672-674, 676-679, 690-694, 734-736 Teacher Wraparound Edition: CFU 694; DI 734; IM 711; SJ 692; TFYI 704; TPK 690	

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries</i> ✓
e.	Provide an example of how technology has helped scientists investigate the universe.	Student Edition: 628-633, 635-642, 643-649, 676-679 <i>Integrate Physics</i> 166 <i>Science Online</i> 645, 700 Teacher Wraparound Edition: ACT 672; CFU 649; DI 647, 697, 706; RE 166; SCB 626E-F; SJ 706		
Objective 1.2: Relate the structure and composition of the solar system to the processes that exist in the universe.				
a.	Compare the elements formed in the big bang (hydrogen, helium) with elements formed through nuclear fusion in stars.	Student Edition: 729, 734-739, 744 <i>Section Review</i> 739 Teacher Wraparound Edition: DIS 739; MM 736		
b.	Relate the life cycle of stars of various masses to the relative mass of elements produced.	Student Edition: 734-739 Teacher Wraparound Edition: DIS 739		
c.	Explain the origin of the heavy elements on Earth (i.e., heavy elements were formed by fusion in ancient stars).	Student Edition: 739 Teacher Wraparound Edition A 739; DIS 739		
d.	Present evidence that the process that formed Earth's heavy elements continues in stars today.	Student Edition: 729, 734-739 Teacher Wraparound Edition: DI 735; MM 736		
e.	Compare the life cycle of the sun to the life cycle of other stars.	Student Edition: 732, 734-739, 751 #20 <i>Science Online</i> 736 <i>Section Review</i> 739 Teacher Wraparound Edition: FF 738; VL 737		

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries</i> ✓
f.	Relate the structure of the solar system to the forces acting upon it.	Student Edition: 692-694 <i>Integrate Physics</i> 692 <i>National Geographic</i> 693 Teacher Wraparound Edition: V 693		
STANDARD II: Students will understand that the features of Earth's evolving environment affect living systems, and that life on Earth is unique in the solar system.				
Percentage of coverage in the <i>student and teacher edition</i> for Standard II: _____ %		Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard II: _____ %		
Objective 2.1: Describe the unique physical features of Earth's environment that make life on Earth possible.				
a.	Compare Earth's atmosphere, solar energy, and water to those of other planets and moons in the solar system.	Student Edition: 438, 646-647, 671-674, 676-679, 696-701, 702-709, 721 #15 <i>Section Review</i> 438 Teacher Wraparound Edition: ACT 708; SCB 688E; TFYI 697, 708; VL 646, 698		
b.	Compare the conditions that currently support life on Earth to the conditions that exist on other planets in the solar system.	Student Edition: 51, 438, 646-647, 696-701, 702-709, 721 #15		
c.	Evaluate evidence for existence of life in other star systems, planets, or moons, either now or in the past.	Student Edition: 696-701, 702-709 <i>Section Review</i> 694, 701 Teacher Wraparound Edition: MM 708; SCB 688E; SJ 709		

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries ✓</i>
Objective 2.2: Analyze how ecosystems differ from each other due to abiotic and biotic factors.				
a.	Observe and list abiotic factors (e.g., temperature, water, nutrients, sunlight, pH, topography) in specific ecosystems.	Teacher Wraparound Edition: IL 550; SCB 540F	Student Edition: (E) 36-42 <i>MiniLAB</i> 38 Teacher Wraparound Edition: (E) A 42; DI 39; IL 39; LD 38; R 11, 42; SCB 34E; TPK 36	
b.	Observe and list biotic factors (e.g., plants, animals, organic matter) that affect a specific ecosystem (e.g., wetlands, deserts, aquatic).	Student Edition: <i>National Geographic</i> 555 Teacher Wraparound Edition: IL 550	Student Edition: (E) 10, 12-19, 20-24, 36 <i>MiniLAB</i> 13 <i>Lab</i> 43 <i>Use the Internet</i> <i>Lab</i> 82-83 Teacher Wraparound Edition: (E) ACT 37; DI 22; IL 14, 82; QD 24; R 11, 19; SJ 23	

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries ✓</i>
c.	Predict how an ecosystem will change as a result of major changes in an abiotic and/or biotic factor.	Student Edition: 557-561 Teacher Wraparound Edition: DIS 564; WQ 150	Student Edition: (E) 12-19, 64-67, 68-75, 77-83, 130-136 <i>Science Online</i> 65 <i>National Geographic</i> 66 <i>Integrate Earth Science</i> 74 <i>Lab</i> 76 <i>MiniLAB</i> 135 Teacher Wraparound Edition: (E) A 76; CFU 24; IM 62F; V 18; VL 52	
d.	Explain that energy enters the vast majority of Earth's ecosystems through photosynthesis, and compare the path of energy through two different ecosystems.	Student Edition: 502, 549-551 <i>Section Review</i> 556 Teacher Wraparound Edition: MM 550; TFYI 551; VL 55	Student Edition: (E) 20-21, 50-53 <i>Integrate Earth Science</i> 51 Teacher Wraparound Edition: (E) A 53; ACT 51; CFU 53; DI 51, 52; IM 62F; MM 22; QD 52; R 53; SCB 34F; TFYI 52; UAA 52; VL 52	

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries ✓</i>
e.	Analyze interactions within an ecosystem (e.g., water temperature and fish species, weathering and water pH).	Student Edition: 185-186, 551-556 <i>National Geographic</i> 189 <i>Integrate Life Science</i> 455, 529 <i>Accidents in Science</i> 564 Teacher Wraparound Edition: CB 564; DI 554; IL 550; SJ 528	Student Edition: (E) 12-19, 20-24, 68-75, 77-83 <i>Launch Lab</i> 35 <i>Science Online</i> 41 <i>MiniLAB</i> 78 <i>Use the Internet</i> <i>Lab</i> 84-85 Teacher Wraparound Edition: (E) A 11; CFU 11, 83; DI 22; IL 39; IM 6F, 62F; R 10, 42; VL 23	
f.	Plan and conduct an experiment to investigate how abiotic factors influence organisms and how organisms influence the physical environment.	Student Edition: <i>MiniLAB</i> 224 <i>Launch Lab</i> 291 Teacher Wraparound Edition: A 556; ACT 213; IL 550; R 227	Student Edition: (E) 13, 36-42 <i>Launch Lab</i> 13, 63 <i>Design Your Own Lab</i> 26-27 <i>Lab</i> 43, 76 Teacher Wraparound Edition: (E) A 27, 43; CFU 42; DI 15; IL 39; IM 62F; R 19, 42	

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries ✓</i>
Objective 2.3: Examine Earth's diversity of life as it changes over time.				
a.	Observe and chart the diversity in a specific area.	Student Edition: 551-556 <i>Use the Internet Lab</i> 414-415 Teacher Wraparound Edition: ACT 564; CC 554	Student Edition: (E) 68-75, 77-83 <i>Launch Lab</i> 7, 125 <i>Lab</i> 76 <i>MiniLAB</i> 78 <i>Use the Internet Lab</i> 84-85 <i>Applying Math</i> 129 Teacher Wraparound Edition: (E) LD 128	
b.	Compare the diversity of life in various biomes specific to number of species, biomass, and type of organisms.	Student Edition: 488-491 Teacher Wraparound Edition: ACT 555; CC 554	Student Edition: (E) 68-75, 77-83, 126-136 <i>Section Review</i> 75 <i>Science Online</i> 81 <i>Use the Internet Lab</i> 84-85 <i>Applying Math</i> 129 Teacher Wraparound Edition: (E) R 75; SJ 80	
c.	Explain factors that contribute to the extinction of a species.	Student Edition: 399, 406, 411, 419 #22 <i>Section Review</i> 399, 406 Teacher Wraparound Edition: DIS 416; SCB 390E; SJ 404; TFYI 411; VL 409	Student Edition: (E) <i>MiniLAB</i> 133, 135 Teacher Wraparound Edition: (E) CB 3; QD 131; SJ 131; TFYI 132	

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries ✓</i>
d.	Compare evidence supporting various theories that explain the causes of large-scale extinctions in the past with factors causing the loss of species today.	Student Edition: 399, 406, 411, 421 #13 Teacher Wraparound Edition: DIS 406; SCB 390E; TFYI 411	Student Edition: (E) 126-136 <i>MiniLAB</i> 133 Teacher Wraparound Edition: (E) QD 140; SJ 131	
e.	Evaluate the biological, esthetic, ethical, social, or economic arguments with regard to maintaining biodiversity.	Student Edition: <i>Use the Internet Lab</i> 562-563 Teacher Wraparound Edition: VL 124	Student Edition: (E) 126-136, 138-143 <i>Lab</i> 144-145 <i>Science and Society</i> 146 Teacher Wraparound Edition: (E) A 143; ACT 128; DIS 130, 131; R 136; SJ 130; UAA 130	

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries</i> ✓
STANDARD III: Students will understand that gravity, density, and convection move Earth's plates and this movement causes the plates to impact other Earth systems.				
Percentage of coverage in the <i>student and teacher edition</i> for Standard III: _____ %		Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard III: _____ %		
Objective 3.1: Explain the evidence that supports the theory of plate tectonics.				
a.	Define and describe the location of the major plates and plate boundaries.	Student Edition: 280-289, 300-303, 332-335 <i>Use the Internet Lab</i> 290-291 Teacher Wraparound Edition: A 289; DI 288, 302; TFYI 287, 288; VL 284		
b.	Compare the movement and results of movement along convergent, divergent, and transform plate boundaries.	Student Edition: 280-289, 297 #25 <i>National Geographic</i> 283 <i>Integrate Physics</i> 288 <i>Section Review</i> 289 Teacher Wraparound Edition: A 289; ACT 274; FF 281; LD 282; MM 286-287; USW 282; V 283		
c.	Relate the location of earthquakes and volcanoes to plate boundaries.	Student Edition: 280-289, 295 #15, 297 #10, 300-303, 332-335 <i>Science Online</i> 282 <i>Use the Internet Lab</i> 290-291 <i>Integrate Earth Science</i> 292 Teacher Wraparound Edition: A 291, 335; ACT 272, 283; AIL 290; CC 287; DI 288; DIS 278; R 335; SCB 298E		

OBJECTIVES & INDICATORS		Coverage in Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)	Coverage in Ancillary Material (titles, pg #'s, etc.)	Not covered in TE, SE or ancillaries ✓
d.	Explain Alfred Wegener's continental drift hypothesis, his evidence, and why it was not accepted in his time.	Student Edition: 272-275, 295 #19, 297 #28 <i>Launch Lab</i> 271 <i>Science Online</i> 273 <i>MiniLAB</i> 274 <i>Applying Science</i> 282 Teacher Wraparound Edition: A 275; DIS 273; QD 281; TFYI 274		
e.	Evaluate the evidence for the current theory of plate tectonics.	Student Edition: 276-278, 280-289, 295 #17, 297 #29 <i>Lab</i> 279 <i>National Geographic</i> 283 <i>MiniLAB</i> 285 Teacher Wraparound Edition: CFU 278; DI 277, 288; MM 286; SJ 281; TFYI 288; VL 284		
Objective 3.2: Describe the processes within Earth that result in plate motion and relate it to changes in other Earth systems.				
a.	Identify the energy sources that cause material to move within Earth.	Student Edition: 285-289, 295 #22, 297 #20 <i>MiniLAB</i> 285 Teacher Wraparound Edition: A 285; R 298		
b.	Model the movement of materials within Earth.	Student Edition: 295 #22 <i>Lab</i> 279 <i>MiniLAB</i> 285, 334 <i>Launch Lab</i> 299 Teacher Wraparound Edition: A 285; ACT 302, 306; DI 286, 306; LD 282, 308; MM 286, 287; QD 302; R 303		

OBJECTIVES & INDICATORS		Coverage in Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)	Coverage in Ancillary Material (titles, pg #'s, etc.)	Not covered in TE, SE or ancillaries ✓
c.	Model the movement and interaction of plates.	Student Edition: <i>Launch Lab</i> 271 <i>Lab</i> 279 <i>Applying Science</i> 282 <i>Integrate Physics</i> 288 Teacher Wraparound Edition: CFU 335; LD 282; MM 286, 287; QD 273, 281, 302; R 303, 335		
d.	Relate the movement and interaction of plates to volcanic eruptions, mountain building, and climate changes.	Student Edition: 274, 280-289, 295 #15, 297 #26-#27, 300-303, 332-335, 498 <i>Science Online</i> 282 <i>National Geographic</i> 283 <i>Use the Internet Lab</i> 290-291 <i>Integrate Earth Science</i> 292 Teacher Wraparound Edition: A 289; 291; CC 297; DI 286, 288; LD 282; SCB 270F; TFYI 274; V 283		
e.	Predict the effects of plate movement on other Earth systems (e.g., volcanic eruptions affect weather, mountain building diverts waterways, uplift changes elevation that alters plant and animal diversity, upwelling from ocean vents results in changes in biomass).	Student Edition: 313-319, 330-331, 399, 406 <i>Science Online</i> 316 <i>Science and History</i> 506 Teacher Wraparound Edition: A 303; ACT 283; DIS 506; QD 316; SJ 333		

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries</i> ✓
STANDARD IV: Students will understand that water cycles through and between reservoirs in the hydrosphere and affects the other spheres of the Earth system.				
Percentage of coverage in the <i>student and teacher edition</i> for Standard IV: _____ %		Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard IV: _____ %		
Objective 4.1: Explain the water cycle in terms of its reservoirs, the movement between reservoirs, and the energy to move water. Evaluate the importance of freshwater to the biosphere.				
a.	Identify the reservoirs of Earth's water cycle (e.g., ocean, ice caps/glaciers, atmosphere, lakes, rivers, biosphere, groundwater) locally and globally, and graph or chart relative amounts in global reservoirs.	Student Edition: 215-220, 238-248, 249-254, 437-438, 514-517 <i>Science Online</i> 242 Teacher Wraparound Edition: CC 605; DI 253, 257; TFYI 251	Student Edition: (E) 44-45	
b.	Illustrate the movement of water on Earth and describe how the processes that move water (e.g., evaporation of water, melting of ice/snow, ocean currents, movement of water vapor by wind) use energy from the sun.	Student Edition: 238-248, 249-254, 435-438, 451 #15-#17; 518-523 <i>Science Online</i> 519 <i>MiniLAB</i> 521 Teacher Wraparound Edition: A 238, 437; LD 522; SCB 236E-F; SJ 437; VL 519	Student Edition: (E) 44-45 Teacher Wraparound Edition: (E) IL 39; SJ 45	
c.	Relate the physical and chemical properties of water to a water pollution issue.	Student Edition: 557-561, 600-607 <i>Integrate Health</i> 606 <i>Lab</i> 608 Teacher Wraparound Edition: A 607; ACT 559; DIS 251; IL 253, 605; IM 604; SCB 540F; SJ 251; TFYI 560; UAA 251	Student Edition: (E) 107-108 Teacher Wraparound Edition: (E) ACT 107; IL 108; QD 107	

OBJECTIVES & INDICATORS		Coverage in Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)	Coverage in Ancillary Material (titles, pg #'s, etc.)	Not covered in TE, SE or ancillaries ✓
d.	Make inferences about the quality and/or quantity of freshwater, using data collected from local water systems.	Student Edition: 600-607, 621 #23, 623 #21 <i>National Geographic</i> 603 <i>Lab</i> 608 Teacher Wraparound Edition: A 607; ACT 606; DI 601, 606; IL 253, 605; QD 601; V 603	Student Edition: (E) <i>Use the Internet</i> <i>Lab</i> 84-85 Teacher Wraparound Edition: (E) SJ 108	
e.	Analyze how communities deal with water shortages, distribution, and quality in designing a long-term water use plan.	Student Edition: 600-607, 621 #25 <i>National Geographic</i> 603 <i>Extra Try at Home Labs</i> 778 Teacher Wraparound Edition: ACT 603; DIS 607; IL 605; R 607; V 603	Student Edition: (E) <i>Science and Society</i> 86 Teacher Wraparound Edition: (E) DIS 86	
Objective 4.2: Analyze the physical and biological dynamics of the oceans.				
a.	Describe the physical dynamics of the oceans (e.g., wave action, ocean currents, El Nino, tides).	Student Edition: 493, 518-523, 524-530 <i>MiniLAB</i> 493, 521, 525 <i>National Geographic</i> 494-495 <i>Launch Lab</i> 513 <i>Science Online</i> 519, 527 Teacher Wraparound Edition: A 521; CB 495; DI 519; LD 522		
b.	Determine how physical properties of oceans affect organisms (e.g., salinity, depth, tides, temperature).	Student Edition: 514-517, 549-556, 557-561 <i>Integrate Life Science</i> 529 <i>Design Your Own Lab</i> 532-533 <i>Section Review</i> 556 Teacher Wraparound Edition: CC 521; DIS 516; IL 551; LD 552; SCB 540F; SJ 528; TFYI 560; V 555	Student Edition: (E) 80-83 <i>Section Review</i> 83 Teacher Wraparound Edition: (E) DIS 81; VL 82	

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries</i> ✓
c.	Model energy flow in ocean ecosystems.	Student Edition: 549-551 <i>Applying Skills</i> 556 Teacher Wraparound Edition: MM 550; TPK 549; VL 550	Student Edition: (E) <i>Integrate Earth Science</i> 51 Teacher Wraparound Edition: (E) ACT 51	
d.	Research and report on changing ocean levels over geologic time, and relate changes in ocean level to changes in the water cycle.	Student Edition: 399, 405-406, 500, 511 #17 Teacher Wraparound Edition: CC 218; CFU 258; DI 218; DIS 405; VL 500		
e.	Describe how changing sea levels could affect life on Earth.	Student Edition: 406, 500 Teacher Wraparound Edition: A 413; CC 16, 218		
STANDARD V: Students will understand that Earth's atmosphere interacts with and is altered by the lithosphere, hydrosphere, and biosphere.				
Percentage of coverage in the <i>student and teacher edition</i> for Standard V: _____ %		Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard V: _____ %		
Objective 5.1: Describe how matter in the atmosphere cycles through other Earth systems.				
a.	Trace movement of a carbon atom from the atmosphere through a plant, animal, and decomposer, and back into the atmosphere.	Student Edition: 502, 511 #13 Teacher Wraparound Edition: CFU 502; UAA 580	Student Edition: (E) 49, 61 #15 <i>National Geographic</i> 49 Teacher Wraparound Edition: (E) ACT 48; DI 48; R 49; V 48	

OBJECTIVES & INDICATORS		Coverage in Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)	Coverage in Ancillary Material (titles, pg #'s, etc.)	Not covered in TE, SE or ancillaries ✓
b.	Diagram the nitrogen cycle and provide examples of human actions that affect this cycle (e.g., fertilizers, crop rotation, fossil fuel combustion).	Student Edition: 427, 578-579, 609-610	Student Edition: (E) 46-47, 61 #21 Teacher Wraparound Edition: (E) A 49; DI 46; R 49	
c.	Interpret evidence suggesting that humans are influencing the carbon cycle.	Student Edition: 499-502, 511 #14-#15 <i>Science Online</i> 501 Teacher Wraparound Edition: A 503; DIS 427, 501; LD 124, 500; VL 500	Student Edition: (E) 49, 104, 136, 151 #19 <i>Section Review</i> 49 <i>Science Online</i> 104	
d.	Research ways the biosphere, hydrosphere, and lithosphere interact with the atmosphere (e.g., volcanic eruptions putting ash and gases into the atmosphere, hurricanes, changes in vegetation).	Student Edition: 468-469, 484-487, 518-520, 611 <i>Integrate Environment</i> 468 <i>Science and History</i> 506 Teacher Wraparound Edition: A 502; CC 498; CFU 502; DI 338; DIS 520; TFYI 427, 468; UAA 580	Student Edition: (E) 44-49, 102-104, 121 #26, 135 <i>MiniLAB</i> 135 Teacher Wraparound Edition: (E) CFU 49	
Objective 5.2: Trace ways in which the atmosphere has been altered by living systems and has itself strongly affected living systems over the course of Earth's history.				
a.	Define ozone and compare its effects in the lower and upper atmosphere.	Student Edition: 426-433, 611 <i>Science Online</i> 428 Teacher Wraparound Edition: A 433; IM 428; MM 432	Student Edition: (E) 105, 136 Teacher Wraparound Edition: (E) DI 105; QD 105	
b.	Describe the role of living organisms in producing the ozone layer and how the ozone layer affected the development of life on Earth.	Student Edition: 400-401, 426-433, 449 #17 <i>Integrate Chemistry</i> 401 Teacher Wraparound Edition: DIS 401; SCB 424E		

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries</i> ✓
c.	Compare the rate at which CO ₂ is put into the atmosphere to the rate at which it is removed through the carbon cycle.	Student Edition: 499-502, 511 #14-#15 Teacher Wraparound Edition: CFU 502; DIS 499, 501; UAA 580	Student Edition: (E) 49	
d.	Analyze data relating to the concentration of atmospheric CO ₂ over the past 100 years.	Student Edition: 500-502 <i>Science Online</i> 499 Teacher Wraparound Edition: DIS 501	Student Edition: (E) <i>Applying Math</i> 121	
e.	Research, evaluate, and report on international efforts to protect the atmosphere.	Student Edition: 432-433, 613-615 <i>Integrate Career</i> 497 Teacher Wraparound Edition: DIS 432; R 502; TFYI 614	Student Edition: (E) 103, 149 #18 Teacher Wraparound Edition: (E) TFYI 105	
STANDARD VI: Students will understand the source and distribution of energy on Earth and its effects on Earth systems.				
Percentage of coverage in the <i>student and teacher edition</i> for Standard VI: _____ %		Percentage of coverage not in student or teacher edition, but covered in the <i>ancillary material</i> for Standard VI: _____ %		
Objective 6.1: Describe the transformation of solar energy into heat and chemical energy on Earth and eventually the radiation of energy to space.				
a.	Illustrate the distribution of energy coming from the sun that is reflected, changed into heat, or stored by plants.	Student Edition: 435-438, 449 #26 <i>Lab</i> 136 <i>MiniLAB</i> 437 <i>Design Your Own Lab</i> 444-445 Teacher Wraparound Edition: A 136, 445; ATP 152; CFU 438; DI 436		

OBJECTIVES & INDICATORS		Coverage in Student Edition (SE) and Teacher Edition (TE) (pg #'s, etc.)	Coverage in Ancillary Material (titles, pg #'s, etc.)	Not covered in TE, SE or ancillaries ✓
b.	Describe the pathways for converting and storing light energy as chemical energy (e.g., light energy converted to chemical energy stored in plants, plants become fossil fuel).	Student Edition: 120-123, 130-135, 549-550 Teacher Wraparound Edition: DI 405; LD 132; TFYI 551	Student Edition: (E) 20, 37-38, 50 <i>Science Online</i> 49 Teacher Wraparound Edition: (E) FF 22	
c.	Investigate the conversion of light energy from the sun into heat energy by various Earth materials.	Student Edition: 130-135, 147 #24, 435-438, 449 #26 <i>Lab</i> 136 <i>Integrate Physics</i> 436 <i>Design Your Own Lab</i> 444-445 Teacher Wraparound Edition: A 136, 445; ATP 152; DIS 436; QD 131		
d.	Demonstrate how absorbed solar energy eventually leaves the Earth system as heat radiating to space.	Student Edition: 435-438 <i>Integrate Earth Science</i> 446 Teacher Wraparound Edition: CFU 438		
e.	Construct a model that demonstrates the reduction of heat loss due to a greenhouse effect.	Student Edition: 499-502 <i>Science Online</i> 499 <i>Lab</i> 503		
f.	Research global changes and relate them to Earth systems (e.g., global warming, solar fluctuations).	Student Edition: 492-502, 509 #19, 511 #17 <i>Integrate Environment</i> 468 <i>MiniLAB</i> 493 <i>National Geographic</i> 494-495 <i>Science Online</i> 499 Teacher Wraparound Edition: A 503; ACT 494; CB 495; DI 338; TFYI 427	Student Edition: (E) 104-105	

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries</i> ✓
Objective 6.2: Relate energy sources and transformation to the effects on Earth systems.				
a.	Describe the difference between climate and weather, and how technology is used to monitor changes in each.	Student Edition: 16-17, 454-461, 470-472, 484-487 <i>Science Online</i> 17 <i>MiniLAB</i> 456 <i>Model and Invent Lab</i> 474-475 Teacher Wraparound Edition: IL 464; QD 429; SJ 466; TFYI 7	Teacher Wraparound Edition: (E) DIS 41	
b.	Describe the effect of solar energy on the determination of climate and weather (e.g., El Nino, solar intensity).	Student Edition: 435-438, 439-443, 454-461, 462-469, 479 #22, 484-487 <i>Launch Lab</i> 453 Teacher Wraparound Edition: A 438; CFU 443; IM 424F, 482F		
c.	Explain how uneven heating at the equator and polar regions creates atmospheric and oceanic convection currents that move heat energy around Earth.	Student Edition: 435-438, 439-443, 518-523 <i>Science Online</i> 440, 519 <i>MiniLAB</i> 485 Teacher Wraparound Edition: CFU 443; IM 424F; UAA 436	Student Edition: (E) 41 Teacher Wraparound Edition: (E) DI 41	
d.	Describe the Coriolis effect and its role in global wind and ocean current patterns.	Student Edition: 439-443, 518-523, 539 #18 <i>Science Online</i> 440 <i>Section Review</i> 443 Teacher Wraparound Edition: ACT 441; QD 440; TFYI 440; V 441		

OBJECTIVES & INDICATORS		Coverage in <i>Student Edition (SE)</i> and <i>Teacher Edition (TE)</i> (pg #'s, etc.)	Coverage in <i>Ancillary Material</i> (titles, pg #'s, etc.)	<i>Not covered in TE, SE or ancillaries ✓</i>
e.	Relate how weather patterns are the result of interactions among ocean currents, air currents, and topography.	Student Edition: 454-461, 462-469, 479 #22, 484-487, 509 #27, 520, 539 #15 <i>Applying Science</i> 486 Teacher Wraparound Edition: CC 485; CFU 487; DI 521; DIS 487, 520; FF 486; R 487; TFYI 465, 486; VL 487	Student Edition: (E) 41-42 Teacher Wraparound Edition: (E) QD 41	